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Strontium Ranelate Might be a Therapeutic Option for Treatment of CRPS

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Authors' contributions

This work was carried out in collaboration between both authors. Author MBP took care for the patient, did all control visits including clinical measurements, collected data and assisted in writing the paper. Author MH was the responsible senior doctor, decided the therapy, managed the literature searches and gave help in writing the case report. Both authors read and approved the final manuscript.

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Case Report

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ABSTRACT

The postmenopausal osteoporosis of a 66-year-old female with long lasting end stage complex regional pain syndrome on the right hand was treated with strontium ranelate 2 grams daily. After few weeks of treatment an impressive improvement of pain and immobility of the right hand occurred.

Keywords: Strontium ranelate; CRPS; complex regional pain syndrome; Sudeck's atrophy; algodystrophy.

1. CASE REPORT

CRPS (complex regional pain syndrome), also referred to as reflex sympathetic dystrophy (RSD), Sudeck's atrophy or algodystrophy, is a common chronic painful condition with allodynia, hyperalgesia, trophic changes and motor dysfunction of a limb, which often leads to a long-

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term disability. No evidence-based treatment is known [1]. Since CRPS is associated with bone demineralization, which results in patchy or diffuse osteoporosis, several studies in recent years have investigated the effect of bisphosphonates for CRPS, showing limited evidence for improvement of motor function, reduction of pain and an increase in local bone mineral density [2,3,4,5,6]. No satisfactory therapy for CRPS is yet known.

We here present a 66-year-old female, who was first time seen at the Rheumatology Unit in February 2013. A decreased bone mass density was described some months earlier and calcium intake was recommended for treatment of her postmenopausal osteoporosis. She was unable to use her right hand because of stiffness and immobility in the metacarpo- and proximal interphalangeal joints. She also suffered from pain in the right hand. Blood tests showed normal values for blood cell count, erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP). Bone turnover markers like calcium, phosphate, procollagen (P1NP) and beta-crosslaps (beta-CTX) were normal; alkaline phosphatase and intact PTH were in the upper normal range. Sudeck's atrophy was diagnosed in 1995 after distal radius fracture. Several therapeutic interventions including physical therapy and calcitonin injections were attempted without success. Chronic pain remained and immobility was rapidly progressing.

The calcium supplementation for treatment of the postmenopausal osteoporosis was recommended by her general practitioner but only sometimes taken by the patient.

We decided to change the therapy of her postmenopausal osteoporosis. With respect to her CRPS we did not recommend bisphosphonates. The patient agreed and gave her informed consent.

Strontium ranelate 2 grams administered daily orally was started immediately [7]. Fingertip-hand distance, SF-SACRAH [8] and a visual analogue scale (VAS) of 100 mm (0=no pain) were used to document disease activity.

Six weeks after the initial intake of strontium ranelate first improvements were reported already. At one of the following visits in September 2014 the fingertip-hand distance was 1 mm (70 mm at the beginning) and the right hand could again be used for easy work. According to the clinical improvement since February 2013, SF-SACRAH decreased from 6.2 to 1.8 and VAS from 80 to 9 mm (Fig. 1). The treatment effect on CRPS symptoms were a welcome and impressive side effect.

CRPS is difficult to treat and often results in major disability and pain. Our patient suffered from CRPS for several years with constant pain and immobility until beginning our new

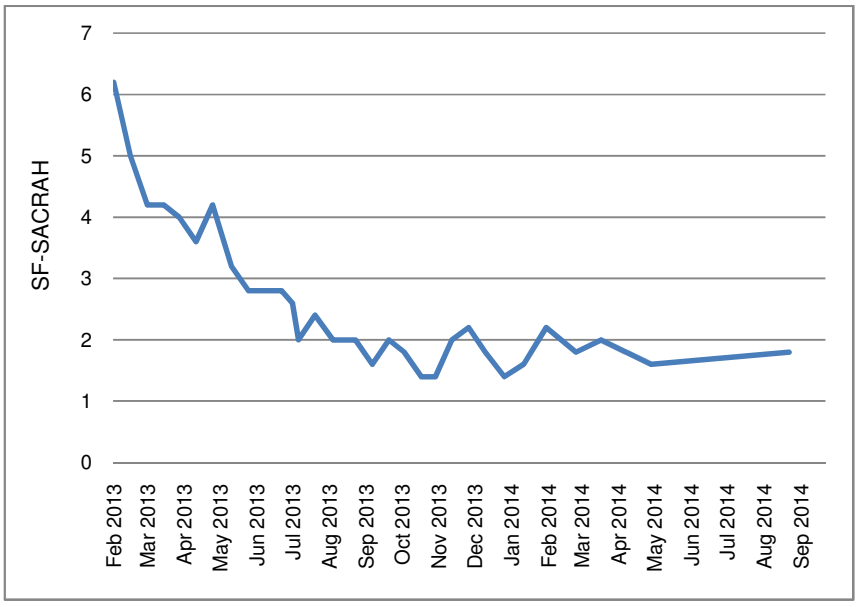

Fig. 1. SF-SACRAH before and during therapy with strontium ranelate in a patient with long-standing CRPS

treatment. With strontium ranelate we observed an impressive improvement in joint motion, increased functionality and reduced pain. We suppose that the effect is based on strontium ranelate's dual mechanism of action, namely promoting bone formation and decreasing bone resorption. Since there is no established treatment for CRPS, we suggest that strontium ranelate might be an effective therapeutic option.

2. CONCLUSION

Up to now no evidence based and successful therapy for CRPS is known. This case makes hope that strontium ranelate 2 g daily could be an effective therapeutic option.

CONSENT

All authors declare that 'written informed consent was obtained from the patient for publication of this case report'.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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